

## Acceptability of nipa fruit (*Nypa fruticans*) native delicacies

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**Abstract:** The study aimed to create a native delicacy out of nipa fruit employing a Completely Randomized Design (CRD). There were 100 tasters who evaluated the acceptability of the products. Score cards with the nine (9) point hedonic scale was used to obtain the data. The overall acceptability was uniformly high across all treatments, indicating that bibingka, baye-baye and espasol made with nipa fruit are “Like Extremely by the consumers.

Keywords: Nipa Fruit, Native Delicacies, Acceptability

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### INTRODUCTION

The Philippines is fortunate and blessed with natural resources and raw materials, including crops, fruits, plants, trees, and even more, which can be seen nearby; From the natural resources that have been bestowed upon our nation, there is a possibility of producing some useful and acceptable products that can represent our country in another country; This can serve as an economical means of livelihood that can help the Philippines.

It is considered as a tropical country which is abundant in palm tree including coconut which include in making native delicacies with this the researcher come up the idea to make native delicacies out of nipa (*Nypa fruticans*) fruit as main ingredient which is abundant coastal municipalities which also contain high in carbohydrates 72-88% and water contain of 13.57, according to Subiandono et al. (2016). The Nipa fruit could be a sustainable source of livelihood. Native Delicacies are common serve of Filipino as dessert or snacks such as Baye- baye, Bibingka and Espasol and etc. This kind of food made from glutinous rice and other ingredients.

Adapted from Tagalog, delicacies mean “kakanin” which is a combination of two basic Tagalog words- “kain” meaning to eat and “kanin,” meaning rice. “Kakanin” commensurates dessert, which is usually served during town fiestas, wedding, and funeral and great helping business engaging in serving delicacies that can help in enhancing and preserving local recipes Torres (20J8). “Bibingka,” “baye-baye” and “espasol” has cultural significance not only for their delicious flavor but also it is symbol of joy and unity of Filipino culture because they are the reflections of the lifestyle, tradition and nature of people existing in the community.

Nipa palm goes by many names including mangrove palm, attap palm, and kitchi-kitchi. A tropical noble palm tree that can easily capture anyone's attention with its long feathery leaves and the thin trunk. In another view, nipa palm signifies triumph in keeping with honest dealings, and this is evident in this regard when we look up to the sky and watch the aftermath of its leaves in swirling in the wind. The development of this study was an opening door of information that nipa was not only source of sap in transforming it into vinegar but also fruit that being thrown away were now useful and can be source of additional income to Filipino people.

If this study brought to the community by means of extension services, it can be maximized profit by means of plantation nipa palm in community with the support of local government and their will possibilities to be the answer of longest time problem of unemployment for those less fortunate or vulnerable people and a chance to recognize globally.

#### *Statement of the problem*

This study explored the formulation and acceptability of nipa fruit (*Nypa fruticans*) in making native delicacies. Specifically, it aimed to determine the acceptability of nipa fruit native delicacies in terms of appearance, aroma, taste and texture;

## LITERATURE REVIEW

#### *Prior arts*

These are the following studies which includes the similarity and differences of the prior study from the present study such as main ingredients, proportions the processes. Barus, et al. (2019), with their study on the use of nipa flour pasta, Halim, et al. (2019), with their study quality assessment of nipa spaghetti, Supaking (2019) in his study nipa fruit toffee product, Gungob, et al. (2016) in their study the development nypa fruticans nipa fruit in making dessert using desiccated nipa fruit.

The study of functional properties of nipa flour by Ulyarti (2017) ratio of filled fruit and rendement flour produced from nipa. Plaza (n.d) with his study nipa fruit pasta its utilization and sensory, The following studies using nipa fruit is similar to present study was used nipa fruit in the formulation and accept ability of nipa fruit in making native delicacies however the study of Gungob, et al. (2021), differ from the present study because it was used fresh nipa fruit furthermore the following studies Oevera, et al. (2020), formulation of nipa tart, Surhaini et al. (2018).

The native delicacies a traditional food of Filipino people which the raw ingredient was found in the Philippines that gives livelihood among Filipinos and become popular in each region. To discover a new ingredient of using nipa fruit which unutilized by the local farmer in making some of the native delicacy This study gives ideas to new generations and communities for food innovations which still considered native delicacy due to ingredients which was grown locally source (Quillano, et al., 2022).

#### *Bibingka*

The history of bibingka goes back Bibingka centuries, reflecting a blend of indigenous practices and influences from foreign traders and colonizers. Its evolution over time has led to various regional variations, each adding its own twist to the classic recipe Regional variations might include the addition of salted duck eggs, cheese or even meat, showcasing the versatility of this beloved dish. Modern interpretations have also emerged, incorporating ingredients like chocolate and fruit, proving that Bibingka can adapt to changing tastes while remaining a cherished tradition The use of banana leaves not only imparts a unique aroma and flavor but also represent a sustainable cooking practice highlighting the eco -friendly aspects of traditional Filipino cooking methods (Gallardo, 2014).

Traditionally, Bibingka is baked in clay pot lined with banana leaves with live charcoal placed both under and above the pot this unique cooking method contributes to the cakes signatures smoky flavor and perfectly browned top. The heat from the charcoal evenly cooks the bibingka, creating delightful contrast between its soft Comparing traditional and modern cooking methods reveals a shift towards convenience without comprising the authentic taste of Bibingka. While clay pots and charcoal are still used in many ways regions, ovens have

become popular alternative, allowing for easier temperature control and consistent results. Despite these modern adaptations, the essence of Bibingka - its rich history, cultural significance, and beloved flavors - remains unchanged, continuing to bring warmth and joy to Filipino celebrations (Gallardo, 2014).

Bibingka is more than just dessert in the Philippines; it's a cherished symbol of the holiday season and a staple at various special occasions, its warm, comforting presence especially prominent during Christmas, where it is traditionally enjoyed after Simbang Gabi - nightly masses held in the nine days leading up to Christmas. This rice cake fosters sense of community and togetherness, serving as a delicious reminder of Filipino importance of family.

Bibingka's role transcend the heritage and beyond festive celebrations marking significant life events and gatherings thereby reinforcing its status as a culinary tradition that binds generations (Uy, 2022), Bibingka, a type of rice cake, holds a significant place in Filipino culinary tradition. Commonly served during the Christmas season and special occasions, it transcends being just a treat to symbolize shared history and family gatherings. Traditionally, this cake is made with rice flour, coconut milk, and sugar, and is uniquely cooked in a clay pot lined with banana leaves, imparting a distinctive flavor and texture (Uy, 2022).

According to Quan (2014), bibingka is a rice cake prepared using galapong, sugar, and coconut milk, cooked in circular shape. Qjan's differs because the meat is first steamed before being baked. This bibingka is baked together with a topping of salted egg or itlog na maalat and garnished with cheese.

### *Biko*

Biko is an easy Filipino dense rice cake that is done with glutinous rice, coconut milk, and palm sugar. Like other rice cakes, jicaman is also a type of Kakanin which is usually eaten as a dessert or snack (Dellota, 2014).

However, for the sake of historical documents of our locality, we have to pinpoint that espasol has indeed originated in Laguna (The Food Diary, 2018). Biko is an easy Filipino dense rice cake that is done with glutinous rice, coconut milk, and palm sugar. Like other rice cakes, jicaman is also a type of Kakanin which is usually eaten as a dessert or snack (Dellota 2014).

### *Maja blanca*

Maja blanca is a pudding choco cake that is prepared from coconut milk, cornstarch, and sugar. The heat is low and the mixture is constantly stirred until it thickens, reaching a gelatin like consistency once it has cooled Described for its melt-in-your-mouth feel and milky taste, some variants of Maja Blanca have features like sweet com kernels, tapioca, and bits of young coconut meat (Manalo, 2022).

Food innovation also refers to the development of new food products along with better techniques and strategies. This means that when conducting any food business, there is always the pressure to ensure you are producing quality products which are healthy, tasty, unique, cheap and organic. However, the line of innovation can be continued with reference to the tradition which appears to be in the process of emerging in the context of Services in the Second half of the twentieth Century due to Rationalizations, Decentralizations, and Globalizations, This sector encompasses various companies that fights for customer attention to give them the best deal (Yun et al, , 2020).

New sources of competitive advantage can also be created through improvement of the organizational processes for innovation of new goods or improvement of objects already in existence (Taques et al. , 2021). Therefore, it is Crucial for firmsto embark on the formulation of innovation strategies forthe purpose of making continuous improvements and the quest

to attain uniqueness in order to serve the purpose of enhancing competitiveness (Backman et al., 2017).

Sustainable innovation has used multiple definitions, and, as stated earlier, a critical discussion about the topic often becomes rather abstract, which has been noted by Backman et al. (2017). Innovation can be rather ambiguous in the context of the hospitality sector due to the great variety of definitions and fields the term may refer to: product, trade, technology and service improvements. New food products are therefore a good example of a PSS and according to Harrington (2014), this is true.

Anyone who has to define within the context of restaurants would clearly distinguish between the two but for restaurant owning businesses to be able to attract more customers and to be able to offer services that is unique from the rest, an Innovation has to be incorporated, Innovations includes all what the restaurateur offers to the market place for the first time and all that he learns from other producers and competitors (Feuls, 2018).

Thus, it is important to mention that with the unrelenting effort of the chefs and the owners of the companies, the restaurant business has remained active all the time (Hon and Lui, 2016), The customers' insight shows that the competitive advantages of the products with respect to their sensory qualities are justifiable as per Van Hest's (2022) conception. It clearly shows that they often tend to make positive decision towards sensory attributes every time they go for a purchase.

In the research Food Marketing in the Developing Nation by Veek (2022) that the positive sensory reviews can indicate compliance with regulatory standards and quality requirements. Foods that meet or exceed sensory expectations are more likely to meet safety, hygiene, and quality standards set by regulatory authorities.

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## METHODOLOGY

### *Research design*

This study used the developmental-experimental research. The experimental method is a systematic and scientific approach to research, in which the researcher manipulates one or more variables, and controls and measures any change in other variables Ibrahim, (2016).

### *Locale of the study and respondents*

The study was conducted in Roxas City, Capiz. The respondents include food technology professors, food experts or bakers, random students, and food technology students in different year levels at Capiz State University.

### *Research instruments*

To evaluate the sensory qualities of the products, a score card was used in this study. For the acceptability evaluation, there were 100 consumers comprised of 20 food experts or bakers; 20 random students; and 60 food technology students in different year levels at Capiz State University. Their honest opinions were solicited. The evaluators are instructed to evaluate the acceptability of the product.

### *Data analyses procedure*

The data were subjected to the Statistical Package for Social Sciences (SPSS). Arithmetic Mean and Analysis of Variance (ANOVA) were the statistical tools used in analyzing and

interpreting the data. The mean was used to determine the general acceptability of the nipa fruit flour in producing native delicacies (baye baye, bibingka, and espasol).

## FINDINGS AND DISCUSSION

### *Acceptability of nipa fruit native delicacies*

The findings shed light on the overall acceptability of three native delicacies (baye-baye, bibingka, and espasol) as perceived by a group of consumers focusing on the sensory qualities was in favored to bibingka.

The data show that in terms of appearance, all three treatments receive high mean scores (Treatment A = 8.22, Treatment B = 8.86 and Treatment C = 8.22), indicating that they were visually appealing and rated as "Liked Extremely." This suggests that the appearance of Baye-Baye, Bibingka, and Espasol made with Nipa fruit flour lower was attractive. Similarly, all treatments score high mean score as s for aroma (Treatment A = 8.15, Treatment B = 8.87, and Treatment C = 8.32), suggesting that they possess pleasing fragrances and are rated as "Liked Extremely."

The mean scores for taste are also consistently high across all treatments aroma (Treatment A = 8.23, Treatment B = 8.88, and Treatment C = 8.14), indicating that they are well-received in terms of flavor and rated as "Liked Extremely." All treatment score highly for texture (Treatment A = 8.20, Treatment B = 8.89, and Treatment C = 8.18), implying that they have favorable mouthfeel and physical characteristics, rated as "Liked Extremely." The overall acceptability scores were uniformly high across all treatments, indicating that Baye-Baye (Overall Mean = 8.20), Bibingka (Overall Mean = 8.84), and Espasol (Overall Mean = 8.21) Nipa fruit delicacies are highly acceptable to consumers, rated as "Liked Extremely."

The results suggest that all three native delicacies prepared using Nipa fruit flour (Baye-Baye, Bibingka, and Espasol) were well-liked across various sensory attributes. The high acceptability scores imply that these delicacies have the potential to be popular choices among consumers. The use of Nipa fruit flour in the preparation of these delicacies appears to enhance their sensory qualities, contributing to their overall appeal and acceptability. In summary, the data collected demonstrates the positive reception and general acceptability of Baye-Baye, Bibingka, and Espasol made with Nipa fruit flour. The consistently high scores across all quality attributes indicate that these delicacies are well-liked and have the potential to be successful products in the market.

These results having the same awareness in the study of Supaking (2019), they implied that having a generally accepted native delicacy food that excels in taste, texture, appearance, aroma, and overall acceptability was a highly desirable outcome with several positive implications which delightful in eating experience in which consumers satisfaction and enjoyment when consuming the native delicacy food pleases their senses, making the eating experience memorable and pleasurable. The texture of their native delicacy food was pleasing, offering a delightful mouthfeel that adds to the overall sensory experience. It was soft, chewy, smooth, depending on the specific delicacy, but it was always enjoyable to eat. It also has aesthetic presentation in the appearance of the native delicacy food, which was visually appealing, enticing consumers to indulge. In their product the aroma of the native delicacy food was enticing, arousing the appetite and heightening anticipation more desirable.

The overall acceptability of their product was the same as the native delicacy food being presented in this study which was widely accepted and enjoyed by consumers, earning positive reviews and recommendations. Its high overall acceptability indicates that it meets or exceeds consumer expectations across all sensory attributes, making it a preferred choice among consumers.

## CONCLUSIONS AND RECOMMENDATION

The study's findings demonstrate positive results for the development and acceptance of Nipa Fruit (*Nypa fruticans*) in several traditional delicacies. The study determines that Nipa fruit flour has the potential to be used in the production of traditional delicacies such as Baye-baye, bibingka, and espasol. After conducting an evaluation of three distinct goods, each weighing 40 grams, the consensus was in favor of the bibingka version, suggesting a clear preference among the evaluators. This choice highlights the practicality and attractiveness of adding Nipa fruit to bibingka, indicating its potential as a preferred ingredient in this specific delicacy. These conclusions demonstrate both the adaptability of nipa fruit in cooking and the potential for additional research and creativity in the fabrication of traditional delicacies.

Hence, the researcher recommends to academic communities and food technologies to prioritize the promotion of the bibingka version of nipa Fruit native delicacies, based on its positive response among evaluators, notably in terms of look, scent, taste, and texture. Furthermore, by including nipa fruit delights into the research extension program at Capiz State University, we can effectively utilize these discoveries to promote the sharing of new knowledge and encourage advancements in the manufacturing of traditional delicacies. Furthermore, future research could investigate unknown variations or elements that were not addressed in this study, broadening the extent of comprehension and potentially revealing further uses for Nipa fruit in culinary settings. The purpose of these recommendations is to fully utilize the potential of Nipa fruit in native delicacies, with the goal of advancing both scholarly discourse and practical culinary techniques.

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